



*One of the first
photos of the A-12
released by the CIA.*

THE CIA'S SUPERSONIC SKY SPY

The A-12 Reconnaissance Aircraft

BY DAVID ROBARGE, CIA/CSI

THE CENTRAL INTELLIGENCE AGENCY (CIA) WAS CREATED IN 1947 PRINCIPALLY TO PROVIDE U.S. LEADERS WITH STRATEGIC WARNING OF ATTACK BY THE SOVIET UNION — PARTICULARLY TO DETECT AND PREEMPT A NUCLEAR PEARL HARBOR. With

the USSR proving an extremely hard target for traditional espionage operations, the United States had to turn to technical collection to peer behind the Iron Curtain. In 1954, CIA retained the Lockheed Corporation to build its first high-altitude reconnaissance aircraft, the U-2, but that innovative jet-powered glider soon became vulnerable to Soviet air defenses — as demonstrated by the Francis Gary Powers shoot down on May 1, 1960. Well before then, U-2 project officers had started planning to replace it with a radically different aircraft — a jet that could fly at extremely high speeds and altitudes while incorporating state-of-the-art techniques in radar absorption or deflection. In a few years that vision was realized with the A-12 OXCART.

“Man must rise above the earth — to the top of the atmosphere and beyond — for only then will he fully understand the world in which he lives.” — Socrates

During the contract competition in 1957-59, Lockheed's chief aviation engineer, the legendary Clarence “Kelly” Johnson, who had designed the U-2, declared: “It makes no sense to just take this one or two steps ahead, because we'd be buying only a couple of years ... I want us to come up with an airplane that can rule the skies for a decade or more.” Johnson and his colleagues at Lockheed's “Skunk Works” conceptualized an aircraft that would cruise at Mach 3.0 at above 90,000 feet. “The higher and faster we fly, the harder it will be to spot us, much less stop us,” Johnson asserted. In August 1959, a U.S. Government selection panel chose Lockheed's twelfth Archangel design over a proposal by Convair, and research and development on the A-12 commenced. “By a sort of inspired perversity,” an Agency officer later wrote, OXCART was selected from a random list of codenames to designate work on the A-12. Eventually the aircraft itself became known by its codename, as well.

The A-12's performance specifications took Lockheed and its several subcontractors into uncharted engineering territory. In



Left: An A-12 pilot suit. These aluminized suits with breathing apparatus, designed to withstand temperature extremes and depressurization, were custom made at a cost of \$30, 000 in the mid-1960's. Right: A-12 Article 128.

July 1961, Johnson wrote in his project log that the Skunk Works was "having a horrible time building the first airplane ... everyone on edge ... and we still have a long, long way to go." Meeting the demands for speed, altitude, and radar cross section required developing such a large array of new materials, tools, and components that the aircraft "practically spawned its own industrial base," according to the CIA's Deputy Director (Plans), Richard Bissell. To withstand temperatures approaching 600° F, the airframe was made mostly of titanium, which was extremely hard and sensitive to contaminants. Special fuels, lubricants, and electronics also had to be developed. Getting the enormously powerful (160,000 hp) J58 turbojet engines to meet design requirements was the most persistent problem. Using

retractable inlet cones maximized thrust and prevented interruptions in fuel combustion at supersonic speeds. To reduce weight, the A-12 had no insulation, so pilots wore a type of space suit with its own cooling and life support systems. It took three years to come up with a camera window that could withstand optical distortion caused by large temperature differences inside and outside the aircraft.

The A-12's pilots also had to satisfy a rigorous set of specifications that the Air Force drew up with advice from Johnson and CIA. Pilots had to have at least 2,000 total flight hours, 1,000 of them in the latest high-performance fighter jets. They had to be married, emotionally stable, and well motivated, between 25 and 40 years old, and under six feet tall and 175 pounds so they could

fit into the A-12's cramped cockpit. After two searches and screenings, 11 pilots — called "drivers" like their U-2 counterparts — were selected to fly missions and "sheepdipped" from Air Force to CIA employment. Six of them eventually flew operationally: Kenneth S. Collins, Ronald J. "Jack" Layton, Francis J. "Frank" Murray, Dennis B. Sullivan, Mele Vojvodich Jr., and Jack W. Weeks.

The CIA and Lockheed partnership with the Air Force was an indispensable part of the OXCART program. In addition to providing pilots and assisting with their processing, the Air Force dispatched to the Nevada test site more than a dozen aircraft that were used for training and proficiency flights, cargo transport, search and rescue, administrative travel, and chase flights. The A-12 consumed huge amounts of fuel — 22,000 pounds per hour at cruising speed and altitude — and had to be refueled during its missions, so massive amounts of fuel had to be positioned at special tank farms at several air bases outside the contiguous United States in Alaska, Greenland, Okinawa, and Turkey. The 903rd Air Refueling Squadron at Beale Air Force Base in California was given the KC 135 tankers for the refueling operations. In addition, the Air Force detailed most of the support personnel and facilities at Kadena Air Base in Okinawa for Operation BLACK SHIELD, the reconnaissance activity the A-12 would undertake in East Asia.

The first A-12 airframe was delivered to the test site in late February 1962, and



Left: This image of the Hanoi area was taken on the fourth mission on June 30, 1967. Right: A view of A-12's in storage after the cancellation of the OXCART program.

the first official test flight occurred on April 30, 1962. The other 14 aircraft in the fleet arrived by mid-1964. Meanwhile, the effort to bring the A-12 up to operational performance requirements was arduous and expensive, particularly sustaining Mach 3 speeds. A Lockheed engineer called the A-12 “a wild stallion of an airplane ... daunting and hard to tame.” Three were lost in non-fatal crashes during this phase. The OXCART team made slow but steady progress, however, and on a final validation flight on November 20, 1965, an A-12 flew for 74 minutes at 90,000 feet at a sustained speed of Mach 3.2 and a peak speed of Mach 3.29. Two days later, Kelly Johnson declared, “the time has come when the bird should leave its nest.”

Ironically, the A-12 never was used in its intended role of

photographing Soviet military facilities. Even as the first airframe was being built, Soviet air-defenses had become advanced enough that even an aircraft flying faster than a rifle bullet at the edge of space would be vulnerable. By 1965, moreover, the imagery satellite programs administered by the National Reconnaissance Office had progressed to the point where manned flights over the Soviet Union were unnecessary. The A-12 thus saw its first operational deployment in East Asia, flying 29 missions over North Vietnam, Cambodia, Laos, and North Korea between May 31, 1967 and May 6, 1968 in the BLACK SHIELD program.

The missions were highly successful. The A-12's aeronautical components and camera systems proved very reliable, and photointerpreters and

military planners had extensive photography of North Vietnamese military sites and economic infrastructures to use in developing order of battle estimates, bomb damage assessments, target sets, and flight routes that would enable U.S. pilots to fly sorties more effectively and safely. The North Vietnamese shot surface-to-air missiles at A-12s three times but caused damage only once.

The A-12 demonstrated its superiority as a quick-reaction collection platform after North Korea seized the U.S. Navy ship *USS Pueblo* while in international waters on January 23, 1968. President Lyndon Johnson's national security adviser, Walt Rostow, recalled, “the whole country was up in arms over this incident. The president was considering using airpower to hit them [the North Koreans]

hard and try to shake our crewmen loose.” Director of Central Intelligence Richard Helms persuaded the president to use the A-12 to find the missing ship, and the *Pueblo* was sighted in photographs from a mission flown on January 26. Rostow said that they “provided proof that our ship and our men were being held. The Koreans couldn’t lie about that, and we immediately began negotiations to get them back.” After difficult and protracted negotiations, North Korea released the surviving crewmembers 11 months later.

The A-12 was decommissioned after less than a year in service because of changing mission requirements, fiscal pressures, and competition between reconnaissance systems. On May 16, 1968, the Johnson

Administration cancelled the A-12 in favor of the Air Force’s SR-71 “Blackbird” — a slightly larger and slower two-seat variant of the OXCART that carried other sensors. With the Intelligence Community relying more on satellites for strategic intelligence, two expensive supersonic aerial reconnaissance programs that were parallel and so similar could not be justified. The CIA’s nine remaining A-12s were deactivated and placed in storage in California, where they remained for many years. Eight are on display at museums around the United States, and one is at the CIA’s Headquarters compound.

The A-12 was a superb intelligence collector and represented a pioneering

accomplishment in aeronautical engineering. American policymakers and commanders used its photography to reach key military and diplomatic decisions. Well over 40 years since it first flew, no piloted jet aircraft has equaled the A-12’s maximum speed or altitude, and no OXCART was shot down despite hundreds of attempts during nearly 3,600 operational sorties.

Dr. David Robarge is the Chief Historian at the Central Intelligence Agency’s Center for the Study of Intelligence.

The Story of Article 128 | By Toni Hiley, CIA/CSI

Article 128

The A-12 Reconnaissance Plane

The A-12 on display at CIA Headquarters is one of only nine still in existence. Known as Article 128, this aircraft was the eighth of 15 A-12s constructed under Project OXCART. This exhibit not only tells this plane’s remarkable history, but also commemorates the two CIA A-12 test pilots, Walt Ray and Jack Weeks, killed in A-12 crashes in 1967 and 1968, respectively.

Between its first flight on October 3, 1963 and its May 28, 1968 retirement, Article 128 logged 453 hours during 232 test and training flights and became the first aircraft to reach Mach 3. Its final destination was CIA Headquarters, arriving there August 9, 2007 not by air, but aboard five wide-load trucks that World Wide Aircraft



The A-12 reconnaissance plane on display at CIA Headquarters.

Recovery (WWAR) transported from Omaha, Nebraska. A five-person WWAR crew then reassembled the airframe in 10 days. Article 128 was officially presented to the Agency on September 19, 2007 during the CIA’s 60th anniversary celebration.

On December 8, 2007, Article 128 “flew” for the last time when two cranes lifted its 39,000-pound

airframe onto a three-pylon mount. The pylons hold the plane’s nose at an eight degree up angle, the same configuration maintained when flying at its operating altitude of 85,000-90,000 feet; and it is rolled nine degrees to the left for visual effect.

Installation of the A-12 exhibit was completed in May 2008, 40 years after Project OXCART ended. For those at CIA, this plane symbolizes the successful collaboration of the Intelligence Community, the Defense Department, and private industry to create a national strategic asset that America’s enemies never dreamed possible.

Toni Hiley is the Curator and Director of the CIA Museum, Center for the Study of Intelligence.